puff had its characteristic black colour, due to the quantity of *accessory* sand and dust.

At 22 o'clock, the upper crateret gave out a little vapour and a little lava, but again became quiet. At 23 o'clock, the lower crateret showed new cracks around about it, with the escape of vapour.

During the night, between the 4th and 5th, the lava again increased, so that it is reported the next morning to be advancing at the rate of 25 m. per hour. It had turned to the west, and flowed down on the south side of the Lion's Paw, or the Observatory ridge, and had divided into two main streams, which subsequently subdivided into minor ones that radiated in different directions.

On July 5, the explosions at the central crater were powerful, so as to form from time to time pine-shaped vapour plumes over the volcano. At others, the vapour was bent over the Atrio by the sirocco wind, so as to spread a shower of dust and sand right across that depression. One of these is well indicated in Fig. 4.

So far no damage has been done except to a private carriage road that crosses the Piano di Ginista to the lower railway station. No cultivated land has been reached. The lava is, however, on a steep slope, and is flowing in the direction of the valley called the Cupa Pallarino, over the edge of which a magnificent cascade of incandescent rock was formed in 1872.

The eruption is quite identical in all its details with the usual antecedent ones, resulting from the formation and extension outwards of radial dykes. Many of such eruptions I have described in these pages and elsewhere, and fully explained their mechanism, production, growth and closure.

Three results may happen: (1) The radial sheet of rock may cool and seal the rift so that the volcano will soon return to the cone-forming stage, as seems to be indicated by the appearance of pasty lava cakes amongst the ejecta on July 5. (2) The fissure may enlarge and extend downward with the outflow of lava, as in 1872, with the formation of a much larger central crater. (3) It may follow the more usual course, as its immediate predecessor, and give issue to a small but almost continuous outflow of lava during months or years.

H. J. JOHNSTON-LAVIS.

P. L. CHEBYSHEV (TCHEBICHEFF).

THE death of Prof. Chebyshev has hardly been noticed in the English papers; and even in Russia, except for a short sketch in the University *Bulletin*, and in a speech of Prof. Markoff's with reference to him, which is reported in the *Bulletin de l'Académie impériale des Sciences de St. Pétersbourg*, no biographical notice has appeared of this celebrated mathematician.

Paphnyty Levovitch Chebyshev was born on May 14, 1821, at Akatovo, in the government of Kaluga; and after being educated privately, entered Moscow University; he completed the usual courses, and took his Bachelor degree. In 1846 he received his Master's degree at the same university for his "Essay on the elementary analysis of the theory of probability," and in the following year commenced a series of lectures as assistant lecturer in Petersburg University. He received the Doctor's degree in 1849 for his well-known "Theory of Comparison," which contained a model exposition of the formation of the theory of numbers, and clearly proved the strength of his mathematical genius. In 1852 Chebyshev was promoted to an extra professorship, and in 1860 to a regular professorship. During 1853-59 he was elected successively assistant, extra, and ordinary tutor in the Academy of Sciences. He remained a professor, doing active work of the most valuable kind, thirty-five years, during the course of which, at various times, he lectured on every branch of pure mathematics, and during one period—in 1849-51—on practical mechanics.

In his numerous writings Chebyshev left a very great deal to the reader's imagination, often giving deductions simply without proofs, but in his lectures he never left a point without the fullest explanation; and his lectures are distinguished not only for elegance and accuracy, but for their extraordinary simpleness; the already-mentioned "Theory of Comparison" may serve as a good example, as well as his proof of Bernoulli's theorem, which is now given in all works on the theory of probability.

The professorial services of Chebyshev had a great significance to the Petersburg University. He placed the teaching of mathematics on a firm basis, and formed an independent school of thought. All the present staff of mathematical teachers in the Petersburg University, except a very few of quite the youngest, are his pupils and follow in his footsteps. His moral influence did not, therefore, cease when he resigned his professorship in 1882. The Council of the University elected him an honorary member, and his pupils kept up the habit of going to him on certain days to have lively discussions on various scientific subjects, in which his indomitable energy acted on his hearers in the most animating manner. He was always to be found engaged either on some complicated calculation or on models of mechanism he had invented.

Everything Chebyshev did bore the impress of genius; he invented new methods for the solution of difficult problems, which had appeared and had remained unsolved; he suggested himself a series of most important problems, and worked at them till the end of his life. His very first writings on the theory of numbers, devoted to the problem of the inter-dependence of the prime numbers, and on limits, gave him a European reputation, and his succeeding investigations on irrational differentials, and maximal and minimal quantities, assured his position as the most original mathematician of the nineteenth century.

He died November 26, 1894; his works will shortly be republished by the Petersburg University.

NOTES.

As already briefly announced in these columns, the Institute of France will celebrate its centenary next October. The programme of the *fêtes* which have been organised in connection with that event has just been sent to the Members and Correspondants of the Institute, the intention being that the centenary shall be marked by a reunion of all the men of light and leading who belong to the Institute. On the afternoon of October 23, there will be a reception in the Palais de l'Institut of the Foreign Associates and Correspondants and of French Correspondants, and in the evening the Minister of Public Instruction will hold a reception. On October 24, a meeting will be held in the Great Hall of the Sorbonne, at which the President of the Republic will attend. Discourses will be delivered by the President of the Institute, the Minister of Public Instruction, and M. Jules Simon. A banquet, to which all the Associates and Correspondants are invited, will take place on the evening of the same day. On October 25, there will be a special performance at the Comédie Française, and a reception will be held by the French President. The celebration will be concluded on October 26, by a visit to the Château de Chantilly. It will be seen from this that the hundredth anniversary of the foundation of the Institute of France will be celebrated in a manner worthy of the high position which the Institute holds among the world's societies of science, art, and literature.

THE seventh session of the Australasian Association for the Advancement of Science will be held in Sydney, from January 3 to 10, 1897, under the presidency of Prof. A. Liversidge, F.R.S. The Presidents and Secretaries of the Sections are as follows: Astronomy, Mathematics, and Physics: President, Mr. R. L. J. Ellery, C.M.G., F.R.S.; Secretaries, Prof. R. Threlfall and Mr. J. Arthur Pollock. Chemistry: President, Mr. T. C. Cloud; Secretary, Mr. W. M. Hamlet. Geology and Mineralogy: President, Captain F. W. Hutton, F.R.S.; Secretaries, Prof. T. W. E. David and Mr. E. F. Pittman. Biology: President, Prof. T. J. Parker, F.R.S.; Secretaries, Prof. W. A. Haswell and Mr. J. H. Maiden. Geography: Secretary, Mr. H. S. W. Crummer. Ethnology and Anthropology: President, Mr. A. W. Howitt; Secretary, Dr. John Fraser. Economic Science and Agriculture: President, Mr. R. M. Johnston; Secretaries, Prof. Walter Scott and Mr. F. B. Guthrie. Engineering and Architecture: President, Mr. H. C. Stanley; Secretary, J. W. Grimshaw. Sanitary Science and Hygiene: President, Hon. Allan Campbell; Secretary, Dr. J. Ashburton Thompson. Mental Science and Education: President, Mr. John Shirley; Secretary, Prof. Francis Anderson. Communications and papers for the meeting, or inquiries, may be addressed to the Permanent Hon. Secretary, The Chemical Laboratory, The University, Sydney, N.S.W.

It is announced that the Hodgkins prize of ten thousand dollars has been awarded by the Smithsonian Institution, in equal proportions, to Lord Rayleigh and Prof. Ramsay, in recognition of their discovery of argon.

We regret to notice the death of Mr. Joseph Thomson, whose explorations in Africa have added so much to our knowledge of that continent. He was only thirty-six years of age.

Science announces the following appointments:—Prof. William J. Hussey, of Illinois, to succeed Prof. Barnard as Astronomer at the Lick Observatory; Dr. J. Allen Gilbert to be Assistant Professor of Psychology at the University of Iowa; Mr. J. H. Tyrrell to be Professor of Geology and Mineralogy in the University of Toronto.

Reuter's correspondent at Newfoundland, writing under date of July 23, says:—The steamer *Kite*, having on board the members of the Peary Relief Expedition, took her departure a few days ago for Bowdoin Bay, Inglefield Gulf. Her return can hardly be looked for before October 1.

Mr. Cecil H. Smith, of the Department of Greek and Roman Antiquities in the British Museum, has been appointed director of the British School at Athens for the next two years, in succession to Mr. Ernest Gardner, who has held the office since 1887. The Trustees of the British Museum have, with the concurrence of the Treasury, given Mr. Smith special leave of absence for the purpose.

The annual meeting of the Society of Chemical Industry was held in Yorkshire College, Leeds, last week. In his presidential address, Dr. T. E. Thorpe, F.R.S., described some of the important advances made in technological chemistry during recent years, and especially dwelt upon the methods used for the enrichment of coal gas; the manufacture of glycerine from waste soap lyes; the manufacture of edible fats; the improvements on the chemical side of photography; and the chemistry of textiles. The following new officers were elected:—President, Mr. Tyrer; Vice-Presidents, Mr. T. Fairley, Mr. Boverton Redwood, Sir H. E. Roscoe, Dr. T. E. Thorpe. Members of Council, Prof. Le Neve Foster, Mr. Douglas Herman, Mr. C. C. Hutchinson, Mr. Ivan Levinstein, Mr. J. S. McArthur, Sir Robert Pullar. Treasurer, Mr. E. Rider Cook. Foreign Secretary, Dr. Ludwig Mond. It was decided to hold the next annual meeting of the Society in London.

Bedford College (for Women) has taken what appears to us to be an important and commendable step in establishing a separate and scientific course of instruction in hygiene. This subject, which is becoming every day of more consideration, has generally been taught in a somewhat disconnected manner, as an adjunct to be attached anywhere, rather than as a distinct study; at Bedford College it is now to take its place as a special subject. Students will be required to devote themselves for a session or more solely to this and allied branches of science, namely, physiology, bacteriology, chemistry, and physics, practically as well as theoretically, and thus they will have the opportunity, by following a connected system of teaching, of really understanding the meaning and practical bearings of the subject. Many appointments as sanitary inspectors, health mistresses in schools, and teachers of hygiene, being now open to women, the subject seems to offer considerable inducement to those who have an aptitude and liking for scientific work, to devote themselves to this study.

Men of science often have occasion to regret that they do not live in the glorious age when tidal evolution shall have so reduced the spin of this world of ours that there will be forty-eight hours in a day. To be able to devote twice the present amount of time to observation would indeed be a boon to the busy investigator, and the man who shows how to do it, places his fellow workers under a deep obligation to him. Yet that is what Dr. Gowers, F.R.S., did in an inaugural address delivered before a general meeting of the Society of Medical Phonographers last week. Here is his argument: "Science rests on observation, which without immediate record is of little value; not only is memory inadequate, but record at once reveals unsuspected imperfections in observation. Compared with longhand, shorthand permits, in a given time, twice the amount of record, while leaving twice the time for observation." Shorthand requires no better recommendation than this to the notice of students of science, and we are glad to know that the Society of which Dr. Gowers is president, though only started last December, has now 165 members. In the daily work of the practitioner, which is peculiar in being a form of personal science, record is very important. For most practitioners, however, record is practically impossible in longhand, while shorthand offers them the desired means. But this is not only the case with medical men; it is always important that observations, however trivial or strange, should be committed to writing. We are, therefore, a little surprised that the Society should, so far as the name is concerned, be only one of Medical Phonographers. Its objects appear to be broad enough to justify the name being changed to the Society of Scientific Phonographers, and a further argument for the more comprehensive designation is that many scientific workers outside the ranks of the medical profession have already become members.

An interesting point in connection with the sand filtration of water has been recently brought to light by Dr. Kurth, of Bremen. It has frequently been pointed out that the thickness of the layer of fine sand in filtering beds cannot be reduced beyond certain limits without endangering the bacterial quality of the filtrate. Making more detailed examinations of the particular bacteria present in the effluent from a filter in which the depth of filtering material had been interfered with, Dr. Kurth found that the rise in the number of bacteria was almost entirely due to the presence in large quantity of one particular microbe, of which, however, no trace could be found in the raw water with which the filter was being fed. On one occasion there were as many as 900 in 1 c.c. present of this special microbe, whilst all the bacteria together in the raw water did not amount to more than 760 in 1 c.c. In this instance, therefore, the objectionable rise in the number of bacteria present in the filtrate did not necessarily indicate that the efficiency of the filter in dealing with the raw water was in fault, but rather that the disturbance of the sand had dislodged certain microbes present in the filtering material. It would appear, therefore, of interest to obtain in cases where the filtrate is unsatisfactory some particulars of the microbes present in the effluent, and determine in what relation they stand to the raw water microbes.

The question of the audibility of fog-horn signals at sea seems destined to occupy a great deal of attention in naval circles. Some time ago we gave a description of the American experiments, which went to prove that round each siren there is a zone, about 1½ nautical miles broad, within which fog-signals cannot be heard, although they are distinctly heard outside that zone. These observations cannot now be treated with the incredulity they at first met with, since other experiments have confirmed them. A series of such experiments are described in *Hansa*. In one of these, the vessel steamed with the wind straight towards the light-ship from a distance of 4½ nautical miles. At a distance of 2¾ miles the sound became faintly audible, and suddenly increased in loudness at 2½ miles, retaining the same intensity up to two miles distance. From 1¾ to 1½ miles the note was scarcely audible, but then it immediately increased to such an extent that it appeared to originate in the immediate neighbourhood of the vessel. The steamer at this point reversed its course, and the fluctuation over this part of the course was found to be the same, except that it was even more strongly marked. Reversing again, the vessel steamed over this distance a third time, and again the sound disappeared at 1½ miles and reappeared again, so loud that it sounded as if the fog-horn was only two cables' lengths off. Then, at half a mile, the sound disappeared entirely, to reappear at quarter of a mile from the light-ship, after which it gradually and steadily increased in intensity until the latter was reached. It is time that this question, which is of great practical importance, should be systematically investigated.

The second annual report of the Iowa Geological Survey, dealing with the work done during 1893, has just come to hand. The Survey was organised just three years ago, and it has carried out some very valuable investigations during its comparatively short existence. The coal deposits of Iowa have received special attention since the organisation of the Survey, and one volume descriptive of them was issued last year. But these deposits are far too extensive to be discussed in a single volume. We have it on the authority of Dr. C. R. Keyes, the Assistant State Geologist, that the area of the coal measures in Iowa is somewhat over twenty thousand square miles, and that isolated carboniferous outliers, and the region bordering the productive coal measures, which must be gone over in tracing the limits of the formation, occupy fully five thousand square miles or more. With reference to the beds of gypsum at Fort Dodge, Dr. Keyes says the area covered by the gypsum contains, approximately, twenty-seven square miles, and that, at the lowest estimate, the mass of gypsum which is found available in the region is not less than sixty millions of tons. Much valuable data with reference to these deposits are given in the report, and also information in regard to the building stones, clays, and other useful mineral substances in Iowa. Though the Survey has primarily a utilitarian point of view, it is clear from the report that the more scientific side of geology is not neglected. Prof. W. H. Norton contributes to the report a paper on the thickness of the Palæozoic strata in North-Western Iowa, based upon records of a number of borings for artesian and other deep wells. He also gives the results of a study of Devonian and Carboniferous outliers in Eastern Iowa. The report is illustrated by thirty-four figures in the text, and thirty-six plates; the most striking of the latter belong to a paper by Dr. Keyes, on glacial scorings in Iowa. Two new localities showing exceptionally fine effects of glacial action were found near the city of Burlington in 1893. One of them is near Kingston, on the top of a bluff overlooking the Mississippi river, and judging from the reproduction of a photograph, it furnishes a very remarkable example of a glaciated surface. Prof. Calvin, the State Geologist, is to be congratulated upon the work carried on under his direction. The Survey has lately lost Dr. Keyes, who has become State Geologist of Missouri, his place being filled by Mr. H. F. Bain.

The fifty-sixth annual meeting of the Royal Botanic Society will be held in the Gardens, Regent's Park, on Saturday afternoon next, the 10th inst., at one o'clock.

A dainty catalogue, in which many rare and valuable geographical works are described, has been issued by Mr. Bernard Quaritch. The catalogue should be seen by all interested in geographical literature.

We learn from the *Journal of Botany* that the herbarium of the British Museum has recently acquired a very fine collection of Hepaticæ made by Herr F. Stephani. It numbers about 10,000 specimens, and includes types of 1100 new species described by Herr Stephani.

The *Proceedings* of the Liverpool Naturalists' Field Club for 1894 contain a record of a large amount of scientific work done in the way of botanical excursions in Lancashire, Cheshire, and North Wales; a list of carboniferous fossils found within twenty miles of Liverpool; and reports of papers read at the evening meetings. The total number of animals and plants that has been recorded as occurring in the district, both living and extinct, is given as 5735.

The August number of the *Quarterly Journal of the Geological Society* contains a paper, by Dr. J. W. Gregory, on the Palæontology and Physical Geology of the West Indies. Among the other papers we notice the following:—Prof. J. B. Harrison and Mr. A. J. Jukes-Brown, on the chemical composition of oceanic deposits; Mr. H. M. Bernard, on the systematic position of the Trilobites; Prof. W. J. Sollas, on the mode of flow of a viscous fluid; Dr. C. S. Du Riche Preller, on fluvio-glacial and inter-glacial deposits in Switzerland; and Mr. E. T. Newton, on fossil human remains from Palæolithic gravels at Galley Hill, Kent.

The Royal College of Belen, Havana, has just published its magnetical and meteorological observations for the year 1890. This institution has regularly issued reports since 1862, and the continuous instrumental curves, which accompany the tables, have furnished valuable information for the investigation of West India hurricanes. Since 1872, one of the late Padre Secchi's well-known and expensive meteorographs has been regularly at work at Havana, and is said to give very satisfactory results. We note that an attempt is made each month to connect the magnetical with the atmospherical disturbances.

We have received from the Jesuit College of Oña, province of Burgos, a pamphlet containing meteorological observations made twice daily, with monthly and yearly results for the years 1883–1894. The Observatory is 1900 feet above sea-level, and is rather sheltered; but the summary of the climate of that part of Spain by Prof. Valladares, and the observations of cirrus clouds and their connection with atmospheric disturbances, are valuable contributions to meteorological science. During the twelve years in question, the extreme shade temperatures varied from 1°·3 to 100°, the annual mean being 51°·8, and the average yearly rainfall was 22 inches.

M. Casimir de Candolle contributes to the *Archives des Sciences Physiques et Naturelles* an important paper on the latent life of seeds. From a series of experiments, chiefly on seeds of wheat, oat, and fennel, he concludes that dormant seeds pass through a period of completely suspended animation, in which all the functions of the protoplasm are quiescent, but from which they revive when again placed in conditions suitable for germination. The immunity from injury appears to depend on the protoplasm of the seed passing into a completely inert state, in which it is incapable of either respiring or assimilating, before exposure to the unfavourable conditions. The period of suspended animation may extend over an indefinite time, probably through a long series of years, and the seeds may during this period be subjected to very low temperatures without destroying their vitality. Those above mentioned were exposed, in a refrigerator, as many as 118 times in succession, to a sudden cooling to temperatures varying between - 30° and - 53° C., without injurious effects. On the other hand, seeds of the sensitive plant and of *Lobelia Erinus* succumbed, for the most part, to similar treatment. These statements have an important bearing on the question of the retention of their vitality by buried seeds.

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mrs. Herman Schlesenger; a Rhesus Monkey (*Macacus rhesus*) from India, presented by Miss Folhurst; a Macaque Monkey (*Macacus cynomolgus*) from India, three Slow Lorises (*Nycticebus tardigradus*) from Sumatra, presented by Mr. Stanley S. Flower; a Geoffroy's Marmoset (*Midos geoffroii*) from Panama, presented by Miss Mina Sangiorgi; a Green Monkey (*Cercopithecus callitrichus*) from West Africa, presented by Mdlle. Eugénie Grobel; a Barbary Ape (*Macacus inuus*) from North Africa, presented by Mr. Edwin Fletcher; two Crested Porcupines (*Hystrix cristata*), two Cape Zorillas (*Ictonyx zorilla*) from South Africa, presented by Mr. J. E. Matcham: a Ducorp's Cockatoo (*Cocatua ducorpsi*) from the Solomon Islands, presented by Mrs. Dexter; a Nightjar (*Caprimulgus europæus*), European, presented by Mr. T. West Carnie; two Robben Island Snakes (*Coronella phocarum*) from South Africa, presented by Mr. Barry McMillam; a ——— Chameleon (*Chamæleon basiliscus*) from Egypt, presented by Mr. J. Buchanan; a Brown Capuchin (*Cebus fatuellus*) from Guiana, a Black-backed Jackal (*Canis mesomelas*) from South Africa, six Ring-tailed Coatis (*Nasua rufa*) from South America, deposited; a Red River Hog (*Potamochœrus penicillatus*) from West Africa, a Sooty Phalanger (*Phalangista fuliginosa*) from Australia; a De Filippi's Meadow Starling (*Sturnella defilippi*) from La Plata, purchased; two Mandarin Ducks (*Æx galericulata*), seven Summer Ducks (*Æx sponsa*), three Chilian Pintails (*Dafila spinicauda*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE ROTATION OF VENUS.—Notwithstanding the persistence with which the planet Venus has been telescopically observed, the period of rotation is still undetermined with anything like certainty. Schröter believed the time of rotation to be 23h. 21m.; and this period, or thereabouts, was pretty generally adopted until the announcement by Schiaparelli, in 1890, that the time of rotation was probably equal to that of the planet's revolution round the sun, that is, about 225 days. This conclusion was based on the rigidity of the markings at different hours of the day and for weeks together. Observations by M. Perrotin and Dr. Terby tend to strengthen the conclusion arrived at by Schiaparelli. On the other hand, M. Niesten observed the planet between 1881 and 1890, and found that a period of 23 hours satisfied his observations; while M. Trouvelot, from nearly twenty years' work, concluded that the rotation period was about 24 hours. In this divided state of opinion, therefore, it is evident that much remains to be done before any satisfactory conclusion can be drawn.

During the present year, Mr. Brenner, of the Manora Observatory, has observed the planet as frequently as possible since April 17 (*Ast. Nach.* 3300). His first observations of a bright and a dark spot near the north pole led him to agree with Schiaparelli, but further observations have changed his opinion, and he now believes the period to be about 24 hours. On July 2 he announced that a marking near the southern cusp had been visible since June 9, but became invisible about 4 p.m. each day, while a well-marked streak appeared about 8 p.m. Other marks also appeared and disappeared in a manner inconsistent with a rotation period of more than 24 hours. One of the most important of the markings, though noted quite independently, appears to be identical with one observed by Mr. Stanley Williams eleven years ago; in a communication to Mr. Brenner, Mr. Williams states: "In 1884 I managed to secure about one hundred sketches of the markings on Venus. These mostly favour a rotation of about 24 hours; but there was one strongly-marked indentation near the southern horn, which remained visible continuously for about a month. It was prolonged on the disc by a narrow and unusually dark and definite streak (for Venus)." Mr. Brenner has since claimed to have proved with certainty that Venus rotates in about 24 hours; some of the markings return regularly at the same hour of the day, and are invisible at other times, when the definition is equally good; and it is even possible to observe the appearance and advancing of the most conspicuous streak.

GEODETICAL OBSERVATIONS.—Dr. Geelmuyden, of Christiania, has recently published the results of a comparison between the astronomical and geodetical determinations made in the course of a triangulation of Norway. The stations selected for observation lie between 59° and 64° lat., and the astronomical work connected with the investigation was conducted under the direction of the late Prof. Fearnley, extending as far back as 1868. The observations refer to measurements made at eleven stations, of which nine have both the azimuth and latitude determined, and two the difference of longitude.

As origin for the geodetical survey, the geographical coordinates of Dragonkollen, a station on the Swedish border, have been chosen, partly because its position is particularly well determined, but principally on the ground that its situation points to the existence of a very small local attraction. Assuming that for this station a vertical line coincides with the normal of Bessel's ellipsoid, Dr. Geelmuyden has computed, with the data already collected in the course of the geodetic survey, the deviations of the plumb-line for the other stations, in which both the azimuth and the latitude have been determined. The results are shown in the following table:—

Station.	Difference of azimuth.	Difference of latitude.	Deviation of vertical.
Jonsknuden	+ 8″·55	- 1″·31	5″·17
Gausta	- 6·23	—	—
Husbergöen	- 0·72	+0·54	0·68
Christiania	- 3·87	+1·79	2·87
Högevarde	- 13·00	—	—
Hostbjörkampen	+ 6·40	+4·68	5·88
Næverfjeld	+ 4·49	+6·62	7·06
Gien	- 10·72	- 2·65	6·20
Graakallen	- 7·71	- 6·98	7·98
Norberghaug	- 6·70	+0·67	3·36

The deviations of the plumb-line here shown, agree on the whole with what might be expected from the conformation of the surface and the contiguity of neighbouring mountains. For example, the westerly deviation of Gien can be explained by the attraction of Dovrefjeld. An exception is, however, met in the case of Norberghaug, where an easterly rather than a westerly deviation would have been expected. A map is attached, in which is shown both the position of the several stations and the direction of the deviation of the plumb-line.

THE INSTITUTION OF MECHANICAL ENGINEERS.

THE annual summer meeting of the Institution of Mechanical Engineers was held in Glasgow last week, under the chairmanship of the President of the Institution, Prof. Alexander F W. Kennedy, F.R.S. A strong local committee had be organised under the chairmanship of Sir Renny Watson, P